



State of Utah

GARY R. HERBERT
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Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF AIR QUALITY
Bryce C. Bird
Director

DAQE-IN100080030-13

April 25, 2013

Doug Jones
Nucor Steel
PO Box 100
Plymouth, UT 84330

Dear Mr. Jones:

Re: Intent to Approve: Modification of Approval Order DAQE-AN100080031-13 to Increase
Production and Add Equipment
Project Number: N10008-0030

The attached document is the Intent to Approve for the above-referenced project. The Intent to Approve is subject to public review. Any comments received shall be considered before an Approval Order is issued. The Division of Air Quality is authorized to charge a fee for reimbursement of the actual costs incurred in the issuance of an Approval Order. An invoice will follow upon issuance of the final Approval Order.

Future correspondence on this Intent to Approve should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. The project engineer for this action is Nando Meli Jr., who may be reached at (801) 536-4052.

Sincerely,

Martin D. Gray, Manager
New Source Review Section

MCG:NM:kw

cc: Mike Owens
Bear River Health Department

STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

**INTENT TO APPROVE: Modification of Approval Order DAQE-
AN100080031-13 to Increase Production and Add Equipment**

Prepared by: Nando Meli Jr., Engineer

Phone: (801) 536-4052

Email: nmeli@utah.gov

INTENT TO APPROVE NUMBER

DAQE-IN100080030-13

Date: April 25, 2013

Nucor Steel

Source Contact:

Doug Jones

Phone: (435) 458-2415

Email: doug.jones@nucor.com

Martin D. Gray, Manager

New Source Review Section

ABSTRACT

Nucor Steel - Plymouth (Nucor) operates an Electric Arc Furnace (EAF) shop, commonly known as a minimill. The facility is a recycling center which utilizes scrap steel as a raw feedstock. Scrap steel is purchased from a number of sources and sorted. The steel is loaded into charge buckets and transported to one of two EAFs. Oxyfuel burners and electricity are used to melt the steel into a liquid. Alloys are added until the desired metallurgy is achieved. The molten material is then continuously molded and cut into billets for stockpiling. The billets are then reheated and transferred to the rolling mill to be shaped and shipped to the customer.

Nucor is requesting to modify their current AO, DAQE-AN100080031-13 to reflect proposed changes at the Plymouth plant. The changes will result in a significant increase in the PTE for PM_{10} , $PM_{2.5}$ and CO. The modifications include installing new pollution control equipment and new process equipment in the EAF shop. The airflows for the EAF baghouse will increase from an annual average flow rate of approximately 700,000 dscfm to an average annual flow rate of greater than 1,000,000 dscfm to better capture fugitive emissions within the meltshop. Nucor recently completed a review of their plant and identified that some of the emission sources that were not permitted, including steam vents that contain particulates and emissions associated with material handling. Nucor has also updated the emission factors used in the calculation of emissions at their plant. The modification included changes due to continuous improvement projects that have been previously permitted and continue to be installed in the melt shop operations.

The modifications will include:

- 1) A new alloy unloading station adjacent to melt shop operations;
- 2) An abrasive saw baghouse vented to the atmosphere;
- 3) A jump mill baghouse vented to the atmosphere;
- 4) A Roll Mill 1 baghouse vented to the atmosphere;
- 5) Rolled product natural gas burner assisted heat retention boxes;
- 6) Three emergency generators;
- 7) Conversion of ladle stir stations to electrically powered LMFs;
- 8) A ladle vacuum degasser;
- 9) Increase flow rate through the EAF baghouse;
- 10) Emergency natural gas fired engines for EAF hydraulics;
- 11) An increase in hours of operation for the steel-making operations; and
- 12) An increase in EAF baghouse flow rates and production rates for the steel-making operations.

Nucor is located in Box Elder County which is a nonattainment area for $PM_{2.5}$. Nucor is a PSD source and a Title V source. This AO is being processed as an enhanced AO, and the Title V permit will be administratively amended after the AO is issued. Nucor is currently regulated by the New Source Performance Standard (NSPS) Subpart AAa (Standards for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed after August 7, 1983).

The PTE emissions (in TPY) will change as follows: PM_{10} (including $PM_{2.5}$) = +33.63, $PM_{2.5}$ = +32.10, NO_x = 9.29, SO_2 = +4.97, CO = +51.21, VOC = +2.31, HAPs = +1.29, and CO_2e = +43,989.60. The new PTE (in TPY) will be as follows: PM_{10} (including $PM_{2.5}$) = 162.66, $PM_{2.5}$ (filterable) = 144.01, NO_x = 350.62, SO_2 = 336.70, CO = 3,023.88, VOC = 139.02, HAPs = 16.75, and CO_2e = 150,000. Nucor is located in a nonattainment area and Appendix S of 40 CFR Part 51 requires offsets for actual to PTE emission increases for pollutants in nonattainment and their precursors. This includes $PM_{2.5}$ and SO_2 for

this nonattainment area. The increase in actual emissions to PTE that will be offset will be as follows: 108.46 tpy for PM_{2.5} and 286.25 tpy for SO₂.

The NOI for the above-referenced project has been evaluated and has been found to be consistent with the requirements of UAC R307. Air pollution producing sources and/or their air control facilities may not be constructed, installed, established, or modified prior to the issuance of an AO by the Director.

A 30-day public comment period will be held in accordance with UAC R307-401-7. A notification of the intent to approve will be published in the Box Elder News & Journal on May 1, 2013. During the public comment period the proposal and the evaluation of its impact on air quality will be available for the public to review and provide comment. If anyone so requests a public hearing within 15 days of publication, it will be held in accordance with UAC R307-401-7. The hearing will be held as close as practicable to the location of the source. Any comments received during the public comment period and the hearing will be evaluated. The proposed conditions of the AO may be changed as a result of the comments received.

Name of Permittee:

Nucor Steel
PO Box 100
Plymouth, UT 84330

Permitted Location:

Nucor Steel
West Nucor Rd
PO Box 100
Plymouth, UT 84330

UTM coordinates: 401000 m Easting, 4637500 m Northing, UTM Zone 12

SIC code: 3312 (Steel Works, Blast Furnaces (Including Coke Ovens), & Rolling Mills)

Section I: GENERAL PROVISIONS

- I.1 The limits set forth in this AO shall not be exceeded without prior approval. [R307-401]
- I.2 Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved. [R307-401-1]
- I.3 All records referenced in this AO or in other applicable rules, which are required to be kept by the owner/operator, shall be made available to the Director or Director's representative upon request, and the records shall include the five-year period prior to the date of the request. Unless otherwise specified in this AO or in other applicable state and federal rules, records shall be kept for a minimum of five (5) years. [R307-415-6a]
- I.4 At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this AO, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Director which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded. [R307-401-4]

- I.5 The owner/operator shall comply with R307-150 Series. Inventories, Testing and Monitoring. [R307-150]
- I.6 The owner/operator shall comply with UAC R307-107. General Requirements: Breakdowns. [R307-107]
- I.7 All definitions, terms, abbreviations, and references used in this AO conform to those used in the UAC R307 and 40 CFR. Unless noted otherwise, references cited in these AO conditions refer to those rules. [R307-101]

Section II: SPECIAL PROVISIONS

II.A The approved installations shall consist of the following equipment:

II.A.1 Nucor Plymouth Bar Mill Group

Electric Arc Furnace Steel Mill

II.A.2 Melt Shop Equipment and Operations

Two carbon electrode furnaces, equipped with natural gas oxy-fuel fired burners and oxygen lances, flux/carbon addition and injection systems, Direct Evacuation Control (DEC) and ancillary equipment (ladles, cranes, etc.) evacuated to a EAF fabric filter baghouse. Melt shop operations include: skull lancing; ladle preheaters; tundish preheaters; ladle/ tundish demolition, reconstruction, rebricking and torching.

II.A.3 Melt Shop Equipment and Operations Continued

The furnaces and associated support equipment may be modified by installation of eccentric bottom tap(s); sidewall and door oxygen lance burner technologies and/or door lancing technologies; alterations in furnace movements including roof swings and tilt mechanisms; and associated components; water cooling system improvements; computer control equipment, refractories, and alterations to raw material feeds such as alloy addition in wire and in bulk, and support equipment modifications.

II.A.4 Melt Shop Equipment and Operations Continued

Support Equipment modification include charge bucket, ladle, crane, electrical transformers, and structure modifications and building modifications. Improved maintenance practices associated with the furnaces will be implemented for the purposes of minimizing lost time associated with equipment breakdowns.

II.A.5 Caster and associated equipment

Continuous casting system with provisions for alloy addition; supplemental oxygen injection heating; backup alloy stir station; and automatic and manual torching operations to cut billets to length evacuated to melt shop baghouse. All modifications to the EAFs and casting systems, or improved maintenance practices, are to be completed for the purpose of increasing production rates as a continuous program of construction, not to exceed AO production limits and emission limits.

II.A.6 Caster and associated equipment Continued

The caster and associated equipment may be modified by: increasing or varying the number of strands; modifications to ladle handling or manipulation systems; ladle stirring; tundish modifications; slag system modifications; alloy addition modifications; casting speed; mold

size and shape modifications, and; liquid steel washout capture systems. Improved maintenance practices at the caster will be implemented for the purposes of minimizing lost time associated with equipment breakdowns.

II.A.7 Storage silos

- A. One storage silo for EAF baghouse material
- B. Two lime/dolomite storage silos equipped with a fabric filter baghouse(s)
- C. Four storage silos for carbon, each equipped with a baghouse filter

II.A.8 Scrap/scrap substitute handling operations

II.A.9 Slag stockpiles

The stockpiles are listed for informational purposes only

II.A.10 Alloy unloading and storage

II.A.11 Billet reheat furnace #1

Furnace is natural gas/propane fired with low NO_x burner
Burner rating 0.090 lb NO_x/MMBTU

II.A.12 Billet reheat furnace #2

Furnace is natural gas/propane fired with ultra-low NO_x burner
Burner rating 0.075 lb NO_x/MMBTU

II.A.13 Water desalination plant

Plant wide water treatment

II.A.14 Associated mobile equipment

This equipment is listed for informational purposes only.

II.A.15 Miscellaneous parts washers

II.A.16 Sandblast station(s)

II.A.17 Evaporative cooling towers

Evaporative cooling towers arrangements for 5 water systems.

II.A.18 Lime, fluorspar, charge carbon, and alloy handling

II.A.19 Miscellaneous gas fired equipment

Miscellaneous plant wide natural gas/ propane cutting torches and burners that are rated less than 1,000,000 Btu/hour each.

This equipment is listed for informational purposes only.

II.A.20 Hot steel rolling operations

Operations are equipped with baghouses venting indoors

II.A.21 Scrap steel stockpiles

This equipment is listed for informational purposes only

II.A.22 Fuel storage tanks

Diesel and gasoline fuel storage tanks less than 19,812 gallons.

II.A.23 Generators and pumps

Miscellaneous diesel, natural gas and propane fueled emergency generators and pumps.

II.A.24 Di-ethylene glycol storage tank

II.A.25 Paint Dip Line

II.A.26 Roll Mill 1

Mill Baghouse vented to atmosphere
 Jump Mill Baghouse vented to the atmosphere
 Abrasive Saw Shack Baghouse vented to the atmosphere
 Roll Mill Heat Retention Boxes equipped with natural gas burners

II.A.27 Unpowered ladle stir stations/Powered LMFs

II.A.28 Ladle vacuum degasser equipped with flare

Burner rating 0.005 lb NO_x/ton

II.A.29 EAF hydraulics

Natural gas fired engines for hydraulics.

II.B Requirements and Limitations

II.B.1 Limitations and Test Procedures

II.B.1.a Nucor shall notify the Director in writing when the following equipment or operations listed in Condition II.A have been installed and are operational:

- A. Alloy unloading station
- B. Abrasive Saw baghouse
- C. Jump Mill baghouse
- D. Roll Mill 1 baghouse
- E. Rolled product natural gas burner assisted heat retention boxes
- F. Three emergency generators
- G. Conversion of ladle stir stations to electrically powered LMFs
- H. A ladle vacuum degasser
- I. Increase flow rate through the baghouse
- J. Emergency natural gas fired engines for EAF hydraulics

To ensure proper credit when notifying the Director, send your correspondence to the Director, attn: Compliance Section.

If Nucor has not notified the Director in writing within 18 months from the date of this AO on the status of the construction and/or installation, the Director shall require documentation of the continuous construction and/or installation of the operation. If a continuous program of construction and/or installation is not proceeding, the Director may revoke the AO. [R307-401-18]

II.B.1.b Emissions to the atmosphere at all times from the indicated emission point(s) shall not exceed the following rates and concentrations*:

Source: EAF Baghouse

Pollutant	lb/hr	grains/dscf (68°F, 29.92 in Hg)	tons/year
TSP (filterable)	27.0	0.0030	
PM ₁₀ (filterable)	21.6	0.0018	
PM _{2.5} (filterable)	21.1	0.00176	
PM _{2.5} (condensibles)	29.53		
SO ₂ (3-hr ave)	93.98		
SO ₂ (24-hr ave)	89.0		
SO ₂ (rolling 12-month total)			322
NO _x (rolling 12-month total)			245
CO (1-hr ave)	1,200		
CO (8-hr ave)	682.93		
CO (rolling 12-month total)			2,800
VOC	22.20		

Source: Reheat Furnace #1

Pollutant	lb/hr
NO _x	15.0

Source: Reheat Furnace #2

Pollutant	lb/hr
NO _x	8.0

* For particulate emission limits where dual limits are listed, both limits apply. [R307-401]

II.B.1.c Stack testing to show compliance with the emission limitations stated in the above condition shall be performed as specified below:

A. Emissions Point	Pollutant	Test Frequency
EAF Baghouse	TSP	Every year
	PM ₁₀	Every year
	PM _{2.5}	Every year
	PM Condensibles	Every year

	SO ₂	CEM
	NO _x	CEM
	CO	CEM
	VOC	Every 5 years
Reheat Furnace #1		
	NO _x	Every 3 years
Reheat Furnace #2		
	NO _x	Every 3 years

B. Testing Status

PM₁₀ and PM 2.5 (filterable) compliance may be demonstrated through TSP testing. If the TSP emissions are below the PM₁₀ and PM_{2.5} limit, then that will constitute compliance with the TSP limit. If the TSP emissions are not below the PM₁₀ limit, testing will be required. If required, this test will be completed within 120 days of the yearly TSP test.

CEM compliance shall be demonstrated through use of a Continuous Emissions Monitoring System (CEM) as outlined in Condition #II.B.4.a below. The CEM that is used to determine compliance shall be operated according to the most recent Title V permit.

C. Notification

The Director shall be notified at least 30 days prior to conducting any required emission testing. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Director.

The source test protocol shall be approved by the Director prior to performing the tests. The source test protocol shall outline the proposed test methodologies, stack to be tested, and procedures to be used. A pretest conference shall be held, if directed by the Director.

D. Sample Location

The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, or other methods as approved by the Director. An Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

E. Volumetric Flow Rate

40 CFR 60, Appendix A, Method 2 or other EPA approved testing methods acceptable to the Director.

F. TSP

40 CFR 60, Appendix A, Method 5D. The minimum sample time and sample volume shall be four hours and 160 dscfm.

G. PM₁₀

The following methods shall be used to measure filterable particulate emissions: 40 CFR 51, Appendix M, Method 201 or Method 201A, or other EPA-approved testing method, as acceptable to the Director. If other approved testing methods are used which cannot measure the PM₁₀ fraction of the filterable particulate emissions, all of the filterable particulate emissions shall be considered PM₁₀.

The condensable particulate emissions shall not be used for compliance demonstration, but shall be used for inventory purposes.

H. $PM_{2.5}$

The following methods shall be used to measure filterable particulate emissions: 40 CFR 51, Appendix M, Method 201A, or other EPA-approved testing method, as acceptable to the Director. If other approved testing methods are used which cannot measure the $PM_{2.5}$ fraction of the filterable particulate emissions, all of the filterable particulate emissions shall be considered $PM_{2.5}$. The portion of the filterable particulate emissions considered $PM_{2.5}$ shall be based on information in Appendix B of the fifth edition of the EPA document, AP-42, or other data acceptable to the Director.

The following methods shall be used to measure condensable particulate emissions: 40 CFR 51, Appendix M, Method 202, or other EPA-approved testing method, as acceptable to the Director.

Both the filterable particulate emissions and the condensable particulate emissions shall be used for compliance demonstration.

I. NO_x

40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other EPA approved testing methods acceptable to the Director.

J. VOCs

VOC emissions shall be determined by simultaneously using 40 CFR 60, Appendix A, Method 25A (total organic gaseous concentration) with two analyzers, with one analyzer configured to read only methane. The difference between the total organic detector and the methane detector shall constitute the VOC measurement.

K. CO

40 CFR 60, Appendix A, Method 10, or other EPA approved testing methods acceptable to the Director.

L. Calculations

To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Director, to give the results in the specified units of the emission limitation.

M. Existing Source Operation

For an existing source/emission point, the production rate during all compliance testing shall be no less than 90% of the maximum production achieved in the previous three years. [R307-401]

II.B.1.d

Visible emissions from the following emission points shall not exceed the following values:

- A. Emissions from the shop and due solely to operations of any electric arc furnaces - 6%
- B. Exhaust of the EAF baghouse - less than 3%
- C. EAF dust handling equipment - less than 10%

- D. Carbon storage silo baghouse exhaust - 10%
- E. Lime/dolomite storage silo exhaust - 10%
- F. Roll Mill baghouse - 10%
- G. Unpaved haul roads and service roads - 20%
- H. Paved haul roads and service roads - 10%
- I. Additive (coke breeze, feldspar, alloys, lime, etc.) batching operations - 10%
- J. Reheat Furnace #1 and #2 - 10%
- K. Sandblasting - 40%
- L. All other points - 20%

Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9.

In lieu of monitoring via visible emission observations for Reheat Furnace #1 and #2, fuel usage shall be monitored to demonstrate that only natural gas or propane is being used as fuel. Results of monitoring for Reheat Furnace #1 and #2 shall be maintained in accordance with R307-415-6a(3)(b). [R307-201]

II.B.1.e The minimum number of EAF baghouse fans to be operated is the number of operating fans used in NSPS Subpart AAa initial performance demonstrations. [R307-401]

II.B.1.f Nucor shall install, calibrate, and maintain one of the following systems to verify that emission control systems are operating within established parameters:

A. Fan ampere and damper setting system

This system shall provide records of fan operation and amperes with readings taken once per shift and provide a fan operation log that records excursion events such as fan shut downs and startups. Required fan amperes and damper positions shall be those established during an initial compliance test where compliance with emission (including opacity) limitations was demonstrated. The records shall be made available to the Director upon request.

B. Continuous volumetric monitoring device

This system will provide a continuous record of airflow in all ducts evacuating the EAF and roof canopy. The monitoring devices may be installed in any location in the exhaust ducts such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of plus or minus 10% over its normal operating range and shall be calibrated according to manufacturer's instructions. The Director may require Nucor to demonstrate the accuracy of the monitoring device(s) according to method 1 and 2, Appendix A, 40 CFR 60. Required airflows will be those established during an initial compliance test where compliance with emission (including opacity) limits was demonstrated. The records shall be made available to the Director upon request.

C. Negative pressure monitoring system

This system will consist of a monitoring device that continuously records the negative pressure in each duct for all ducts used to evacuate emissions from the EAF(s). The pressure shall be

recorded as 15-minute integrated averages. The monitoring devices shall be installed in any appropriate location in the ducts such that reproducible results are obtained and shall be upstream of any damper in the duct. The pressure-monitoring device shall have an accuracy of plus or minus five (5) mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

Measurements of the minimum negative pressure recorded during the initial performance test of condition II.B.1.c above for each duct shall be the minimum allowed negative pressure during the charging, melting, and tapping stages for each furnace. Nucor shall maintain a log of the negative pressures in integrated 15-minute averages of each furnace during all stages. The log shall be made available to the Director or Director's representative upon request.

Nucor shall establish the parameters during the initial compliance test(s) and shall submit the parameters to the Director for approval. Nucor shall operate the emission control systems within the approved parameters. [R307-401]

II.B.1.g Nucor shall perform visible emission observations of emissions from the EAF baghouse with a certified observer. Observations shall be conducted at least once per day when at least one of the furnaces is operating in the melting/refining stage. These observations shall be taken in accordance with Method 9, and for at least three six-minute periods. Records of daily observations shall be maintained on site. [R307-401]

II.B.1.h The melt shop operation shall not exceed 8,300 hours of operation per rolling 12-month period.

Monitoring:

Nucor shall calculate, by the twentieth day of each month, a 12-month total based on the first day of each month using data from the previous 12 months. Hours of operation shall be determined by supervisor's monitoring and maintenance of a daily operations log.

Recordkeeping:

Results of monitoring shall be maintained in accordance with Condition I.3 of this permit. [R307-401]

II.B.1.i Nucor shall perform monthly operational status inspections of the equipment that is important to the performance of the EAF emissions total capture system. The inspections shall include all ducting, dampers, switches, etc. This inspection shall include observations of the physical appearance of the equipment (e.g. presence of holes in the ductwork or canopy, flow constrictions caused by dents or accumulation of dust in the ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed. Records of the results of the monthly inspections and maintenance/repairs performed shall be maintained. [R307-401]

II.B.1.j Emergency generators and pumps shall only be used during the periods when electric power is interrupted and/or during maintenance. Records documenting generator and/or pump usage shall be kept in a log and they shall show the date the generator and/or pump was used, the duration in hours that the generator and/or pump was used, and the reason for each generator and/or pump usage. [R307-401]

II.B.2 **Roads and Fugitive Dust**

II.B.2.a All unpaved roads and other unpaved operational areas that are used by mobile equipment shall be water sprayed and/or chemically treated to control fugitive dust. Treatment shall be of sufficient frequency and quantity to maintain the surface material in a damp/moist condition. The opacity shall not exceed 20% during all times the areas are in use or unless it is below freezing. Records of water treatment shall be kept for all periods when the plant is in

operation. The records shall include the following items:

- A. Date
- B. Number of treatments made, dilution ratio, and quantity
- C. Rainfall received, if any, and approximate amount
- D. Time of day treatments were made

Records of treatment shall be made available to the Director upon request, and shall include a period of two years ending with the date of the request. [R307-401]

II.B.2.b The paved haul roads and operational areas shall be periodically swept or water-flushed-clean as conditions warrant or as determined necessary by the Director. Records of cleaning paved roads shall be made available to the Director or Director's representative upon request. Records shall include a period of two years before the date of request. [R307-401]

II.B.2.c There shall be no active exterior coke breeze, and feldspar stockpiles located at the Nucor manufacturing site. [R307-401]

II.B.2.d Water sprays shall be installed to ensure all conveyor transfer points and batching equipment drop points are adequately controlled for fugitive emissions:

An alternative to water sprays for items listed above may be to enclose the transfer/drop points. The sprays shall operate whenever dry conditions warrant or as determined necessary by the Director. [R307-401]

II.B.3 **Fuels**

II.B.3.a Nucor shall use only natural gas or propane as a fuel in the steel making processes and comfort heating. The plant-wide consumption of natural gas at the steel plant shall not exceed 2,340,000,000 scf per year and propane shall not exceed 2,800,000 gallons per year, not including fuel consumed by oxy-fuel burners for the two EAFs. Nucor shall install a meter or meters, which measure the amount of natural gas consumed by the EAF oxy-fuel burners. Nucor shall install a meter, which measures the volume of propane-consumed plant wide. Compliance with the annual limitations shall be determined on a rolling 12-month total. Consumption of natural gas shall be determined by the last 12 vendor billing statements with the appropriate conversion of acf to scf, as recommended by the vendor, and subtracting from the statements the amount of fuel consumed by the EAF oxy-fuel burners. Consumption of propane shall be determined by records of propane consumed at the steel making plant, by Nucor's meters. [R307-401]

II.B.3.b The plant wide consumption of diesel fuel by on-site equipment at the steel making plant, both mobile and stationary, shall not exceed 285,000 gallons per rolling 12-month period. Compliance with the annual limitation shall be determined on a rolling 12-month total. Consumption of diesel fuel shall be determined by the last 12 vendor billing statements. [R307-401]

II.B.3.c The sulfur content of any fuel oil or diesel burned shall not exceed 0.0015 percent by weight. Nucor must maintain a fuel specification certification document from the fuel supplier with the sulfur content guarantee. Alternatively, sulfur content may be verified through testing completed by Nucor or the fuel supplier using ASTM Method D-4294-10 or approved equivalent. [R307-401]

II.B.4 Monitoring - Continuous Emissions Monitoring

II.B.4.a Nucor shall install, calibrate, maintain, and operate a CEM system on EAF baghouse exhaust stacks. Nucor shall record the output of the system, for measuring the NO_x emissions, SO₂ emissions, and CO emissions. The monitoring system shall comply with all applicable sections of R307-170 and 40 CFR 60, Appendix B.

Except for system breakdown, repairs, calibration checks, and zero and span adjustments required under paragraph (d) 40 CFR 60.13, Nucor shall continuously operate all required continuous monitoring systems and shall meet minimum frequency of operation requirements as outlined in 40 CFR 60.13 and Section R307-170. [R307-401]

II.B.5 VOC Limitations

II.B.5.a The emissions of VOC at the Nucor mill plant from miscellaneous solvent, cleaners (excluding janitorial), and painting shall not exceed 30.64 tons per 12-month period. The plant wide emissions of VOC from the steel mill plant shall be determined by maintaining a record of VOC potential contained in the materials used each month. [R307-401]

Section III: APPLICABLE FEDERAL REQUIREMENTS

In addition to the requirements of this AO, all applicable provisions of the following federal programs have been found to apply to this installation. This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including UAC R307.

NSPS (Part 60), A: General Provisions

NSPS (Part 60), AA: Standards of Performance for Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974, and On or Before August 17, 1983

NSPS (Part 60), IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

NSPS (Part 60), JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

MACT (Part 63), A: General Provisions

MACT (Part 63), ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

MACT (Part 63), YYYYY: National Emission Standards for Hazardous Air Pollutants for Area Sources: Electric Arc Furnace Steelmaking Facilities

MACT (Part 63), CCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities
Title V (Part 70) major source

PERMIT HISTORY

The final AO will be based on the following documents:

Supersedes	DAQE-AN100080031-13 dated March 18, 2013
Incorporates	NOI dated June 25, 2012
Incorporates	Additional Information dated February 14, 2013
Incorporates	Additional Information dated February 27, 2013
Incorporates	Additional Information dated March 1, 2013
Incorporates	Additional Information dated April 18, 2013
Incorporates	Additional Information dated April 16, 2013
Incorporates	Additional Information dated April 13, 2013

Incorporates
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Additional Information dated April 7, 2013
Additional Information dated April 4, 2013
Additional Information dated March 9, 2013

ADMINISTRATIVE CODING

The following information is for UDAQ internal classification use only:

Box Elder County

CDS A

PSD, Nonattainment or Maintenance Area, Title V (Part 70) major source, NSPS (Part 60), MACT (Part 63),

ACRONYMS

The following lists commonly used acronyms as they apply to this document:

40 CFR	Title 40 of the Code of Federal Regulations
AO	Approval Order
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CDS	Classification Data System (used by EPA to classify sources by size/type)
CEM	Continuous emissions monitor
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CMS	Continuous monitoring system
CO	Carbon monoxide
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent - 40 CFR Part 98, Subpart A, Table A-1
COM	Continuous opacity monitor
DAQ	Division of Air Quality (typically interchangeable with UDAQ)
DAQE	This is a document tracking code for internal UDAQ use
EPA	Environmental Protection Agency
FDCP	Fugitive Dust Control Plan
GHG	Greenhouse Gas(es) - 40 CFR 52.21 (b)(49)(i)
GWP	Global Warming Potential - 40 CFR Part 86.1818-12(a)
HAP or HAPs	Hazardous air pollutant(s)
ITA	Intent to Approve
LB/HR	Pounds per hour
MACT	Maximum Achievable Control Technology
MMBTU	Million British Thermal Units
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOI	Notice of Intent
NO _x	Oxides of nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
PM ₁₀	Particulate matter less than 10 microns in size
PM _{2.5}	Particulate matter less than 2.5 microns in size
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
R307	Rules Series 307
R307-401	Rules Series 307 - Section 401
SO ₂	Sulfur dioxide
Title IV	Title IV of the Clean Air Act
Title V	Title V of the Clean Air Act
TPY	Tons per year
UAC	Utah Administrative Code
UDAQ	Utah Division of Air Quality (typically interchangeable with DAQ)
VOC	Volatile organic compounds